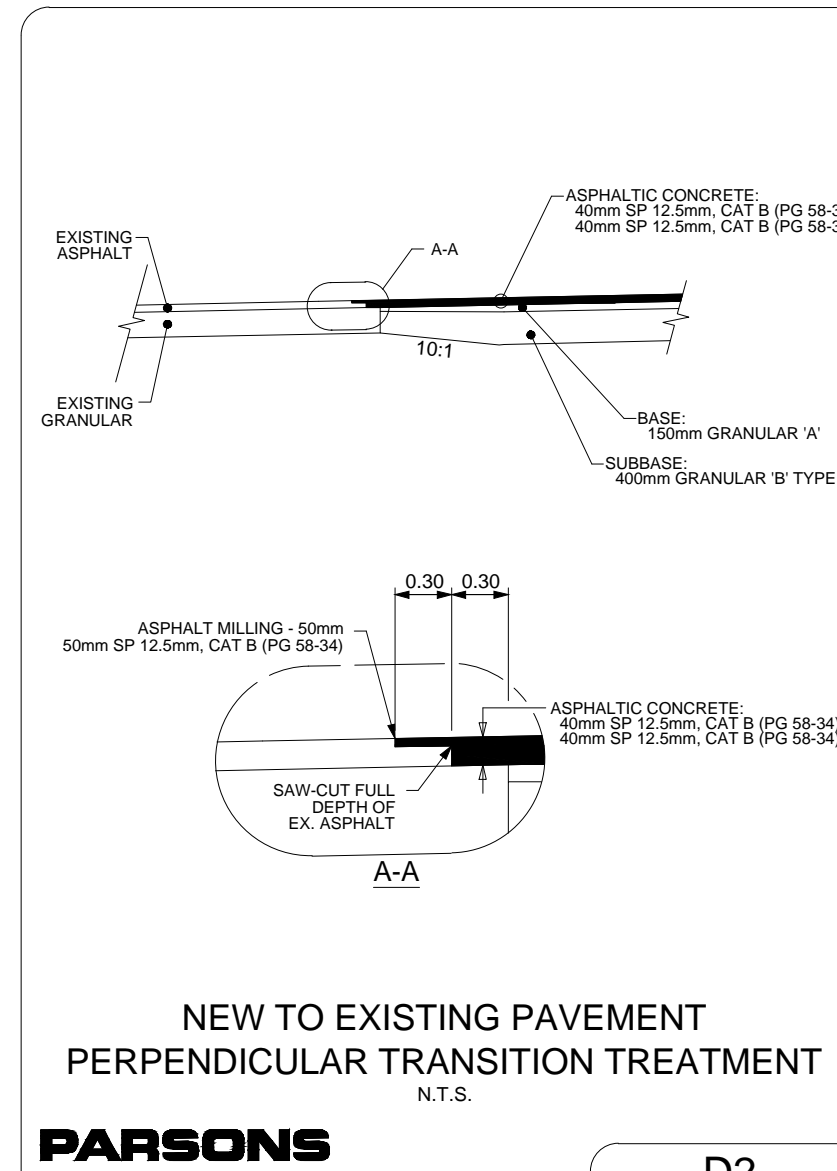
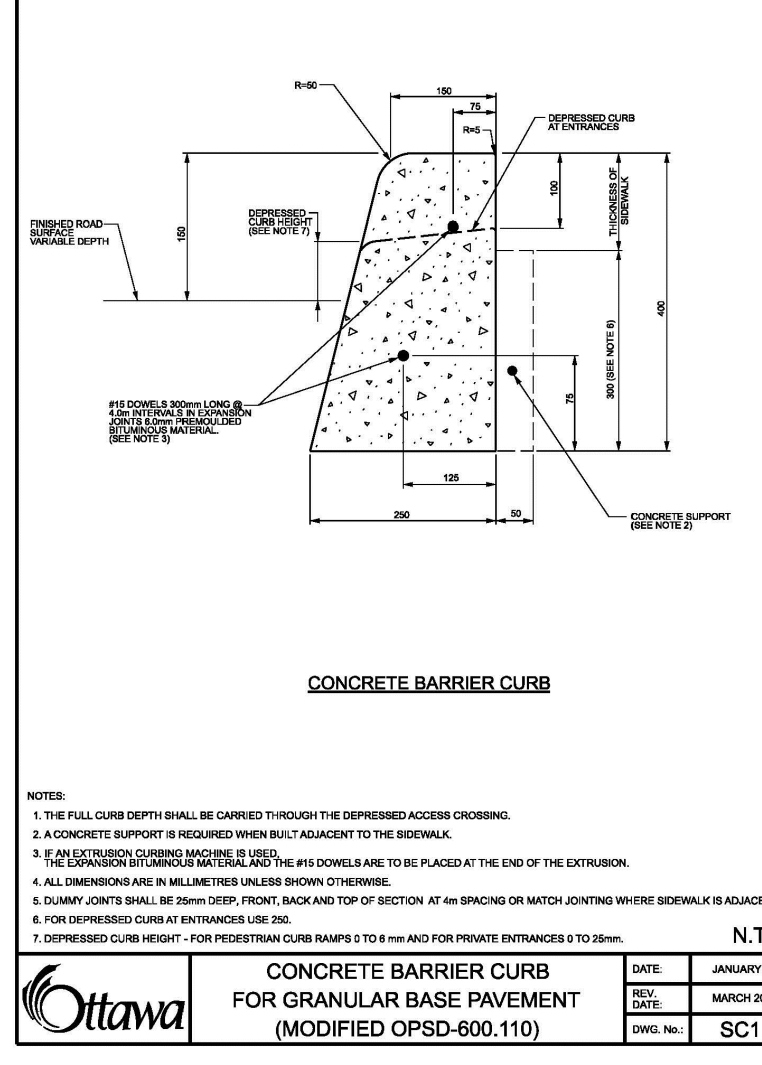
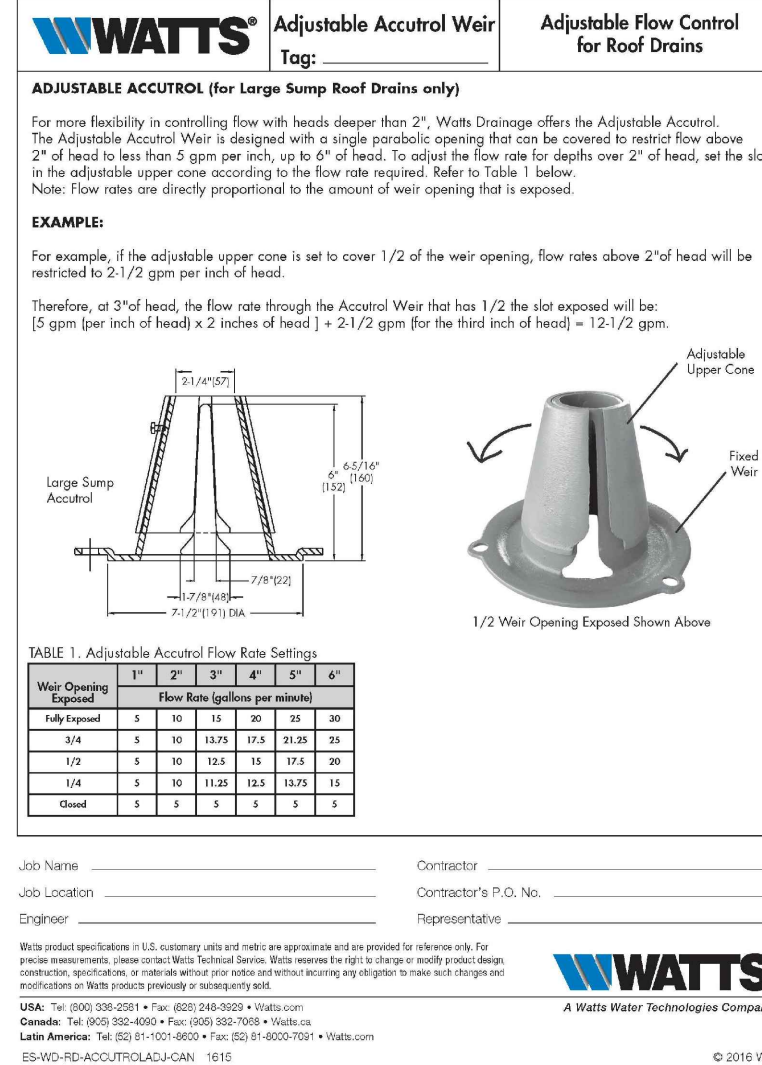


**PARSONS** D1



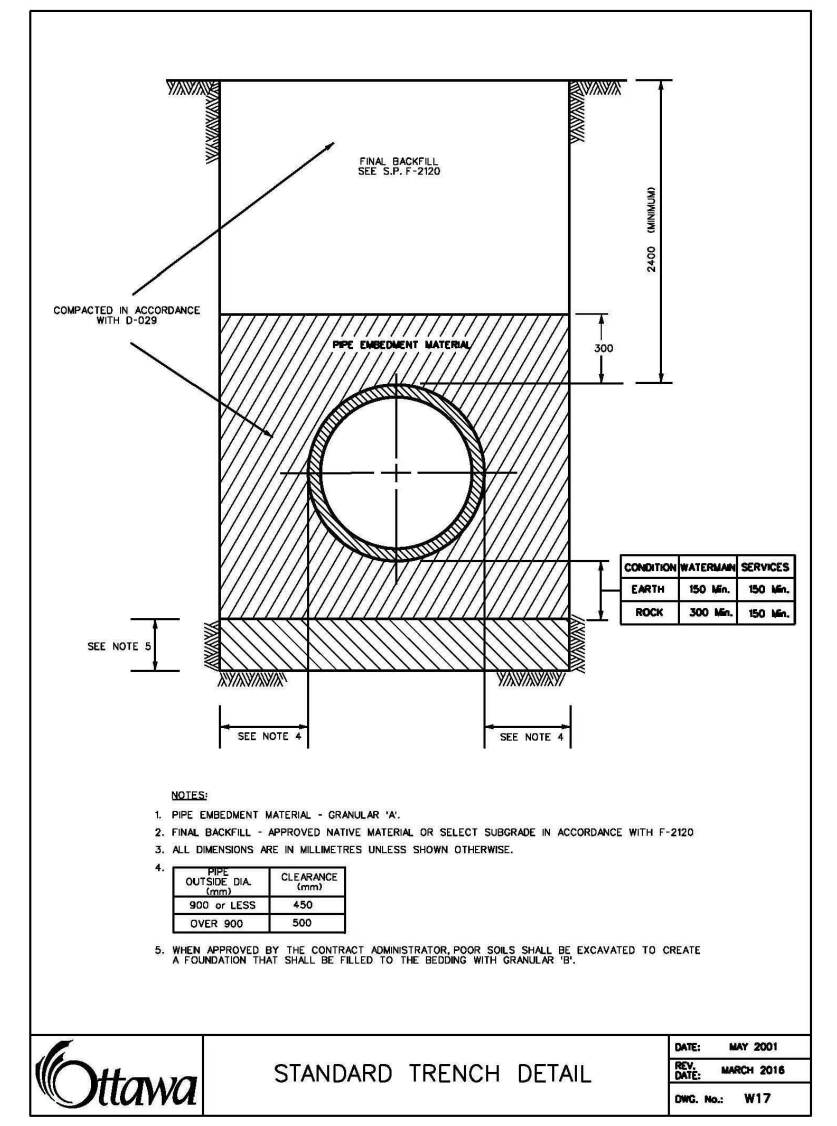
**PARSONS** D2



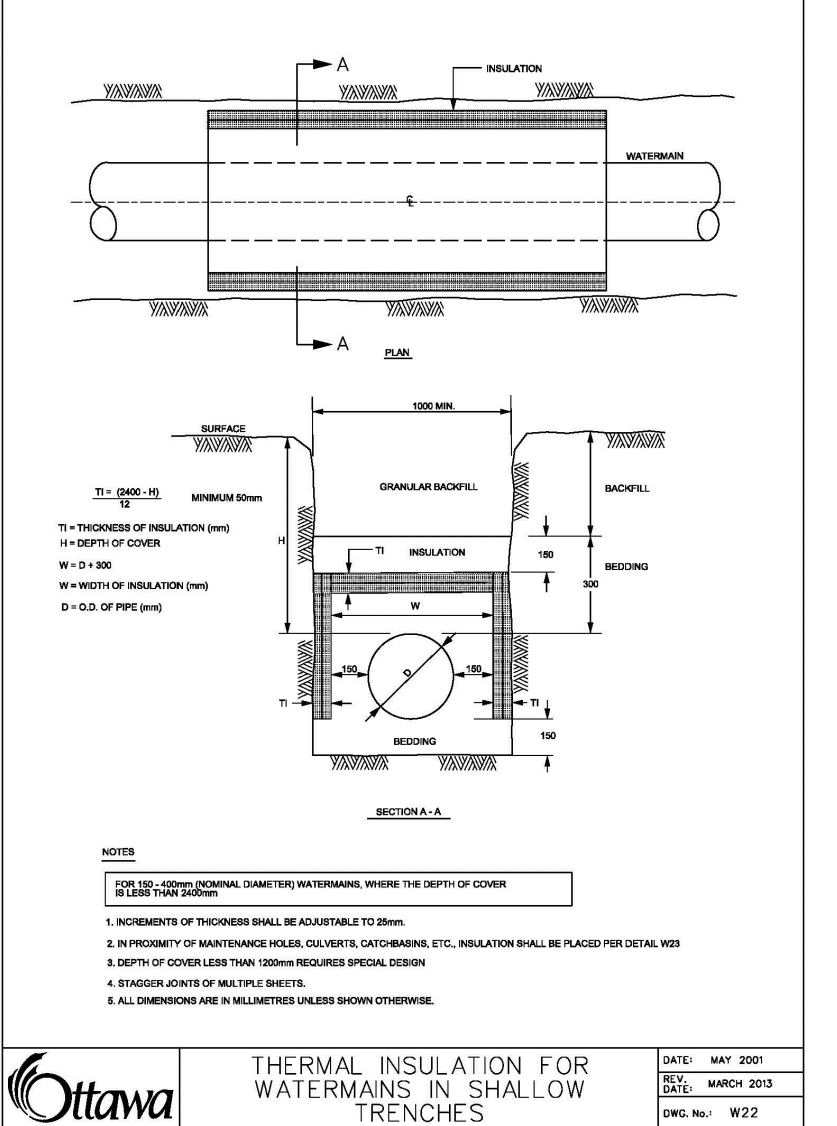
**Ottawa** CONCRETE BARRIER CURB (MODIFIED OPSD-600-110)



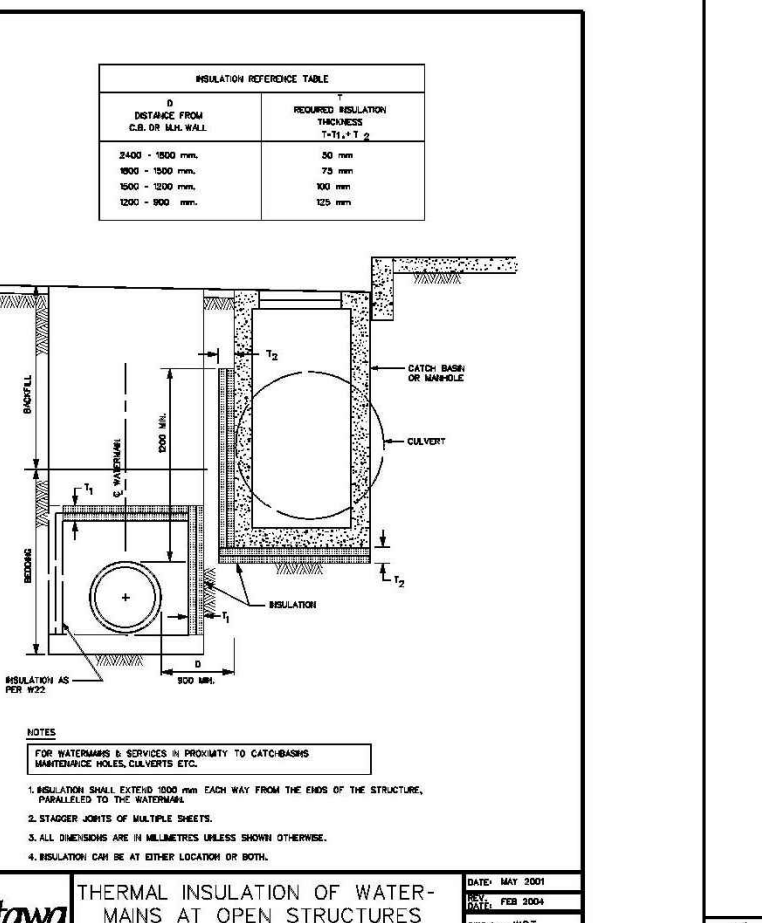
**Ottawa** SIDEWALK CONSTRUCTION JOINTS



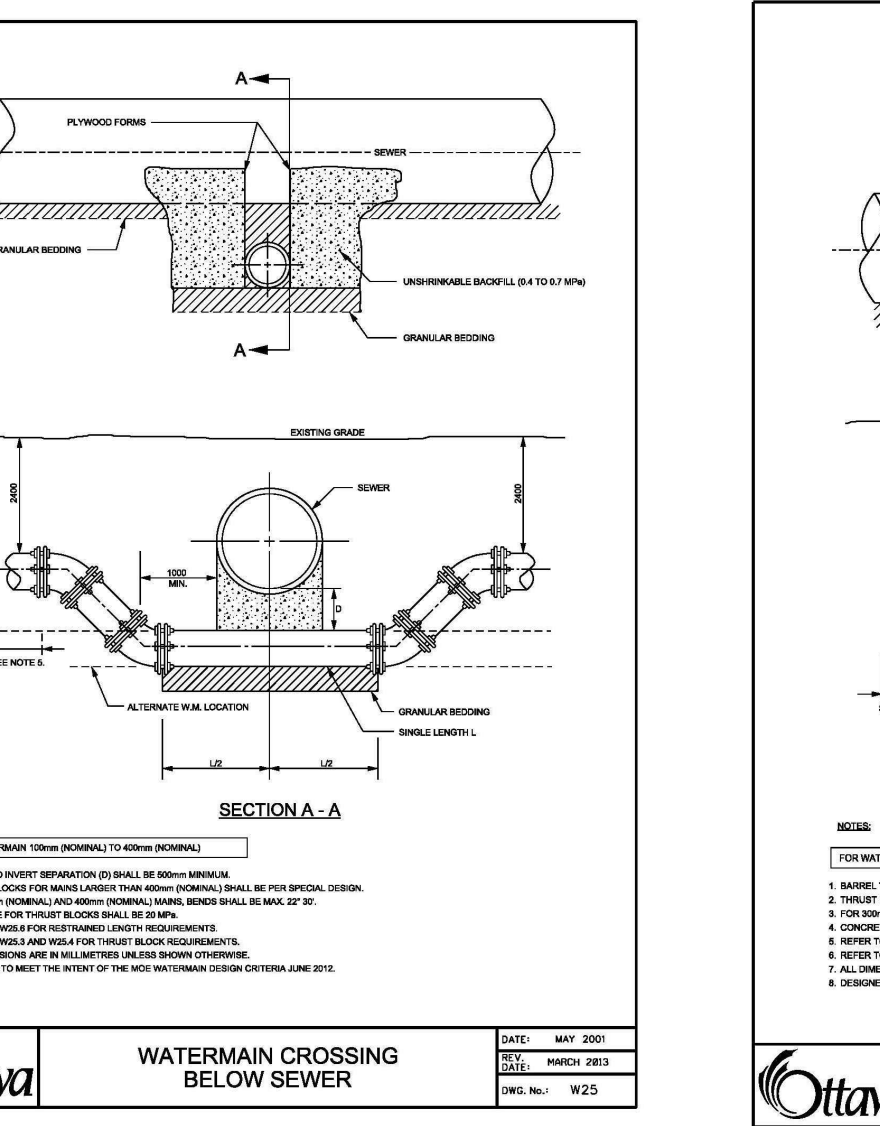
**Ottawa** STANDARD TRENCH DETAIL



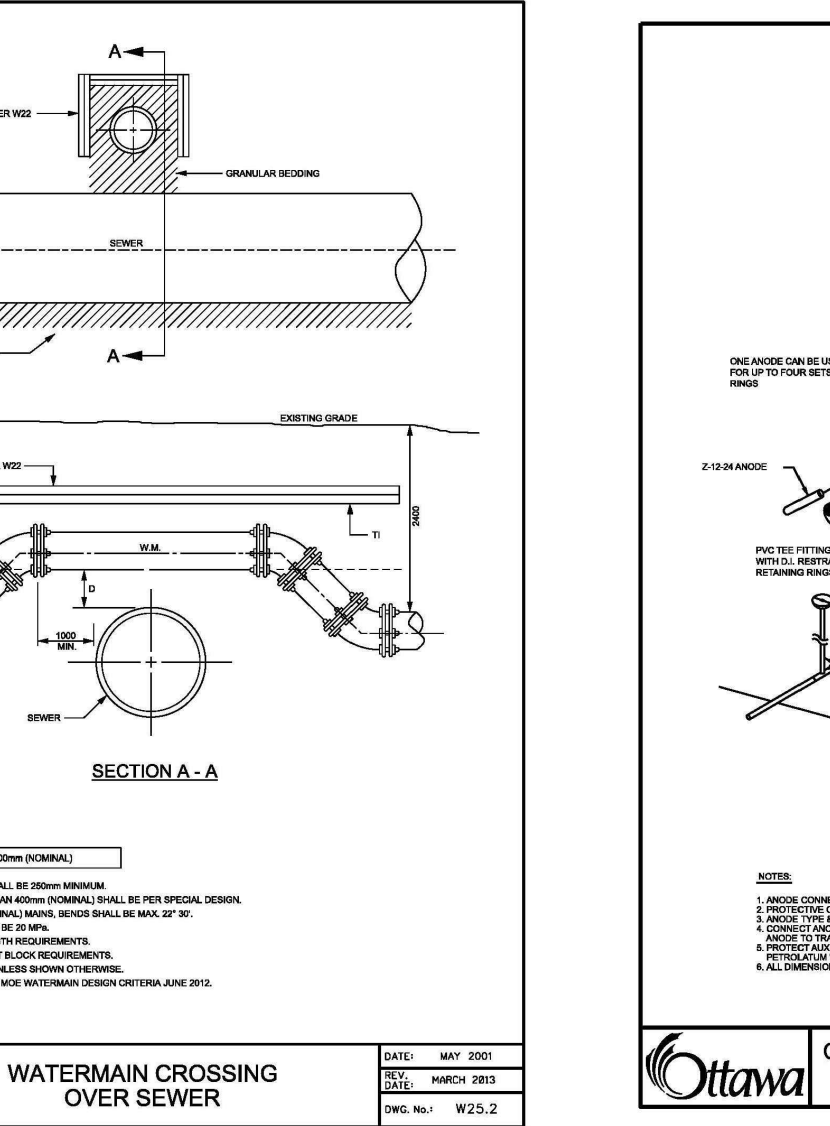
**Ottawa** THERMAL INSULATION FOR WATERMANS IN SHALLOW TRENCHES



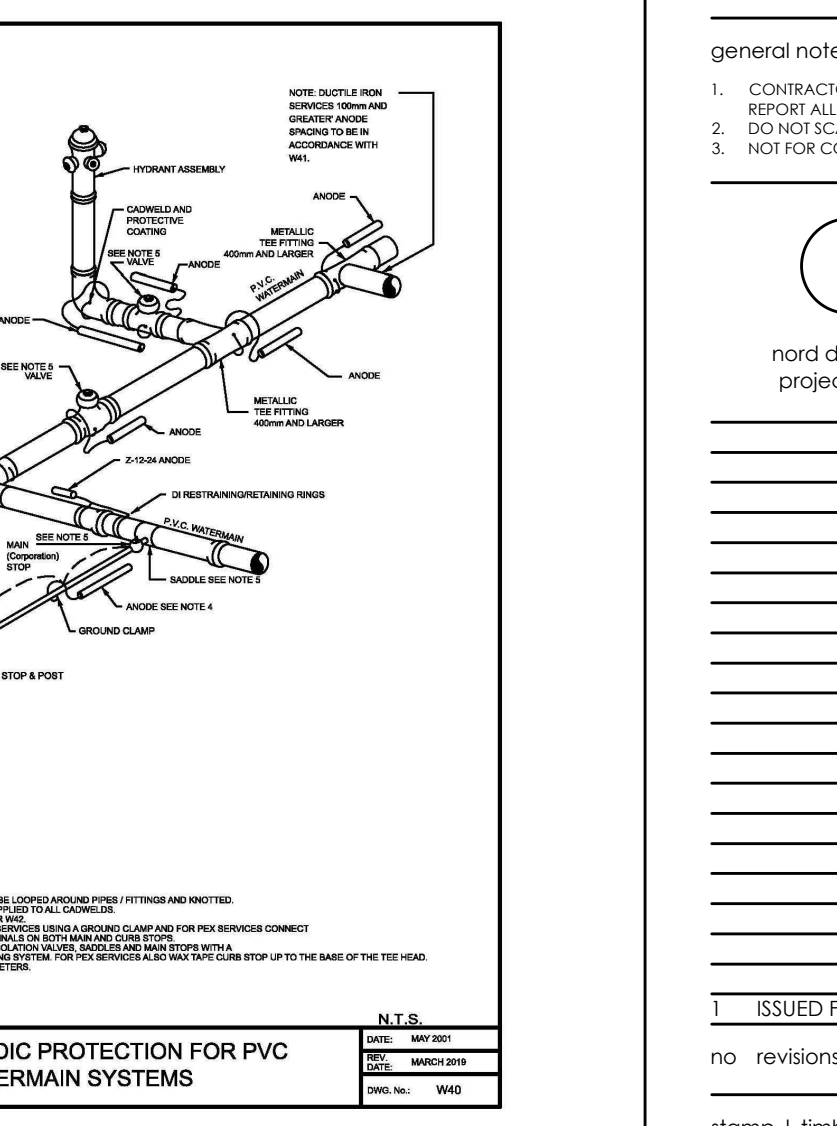
**Ottawa** THERMAL INSULATION OF WATERMANS AT OPEN STRUCTURES



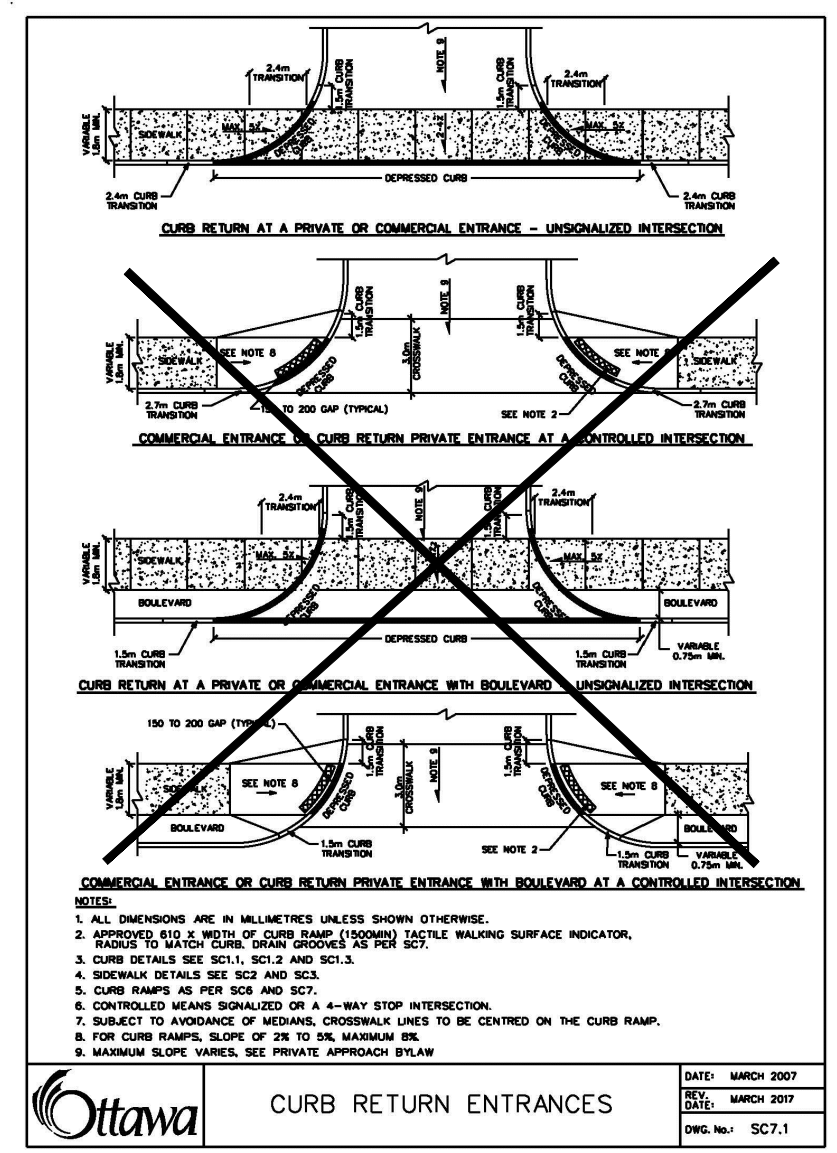
**Ottawa** WATERMAIN CROSSING BELOW SEWER



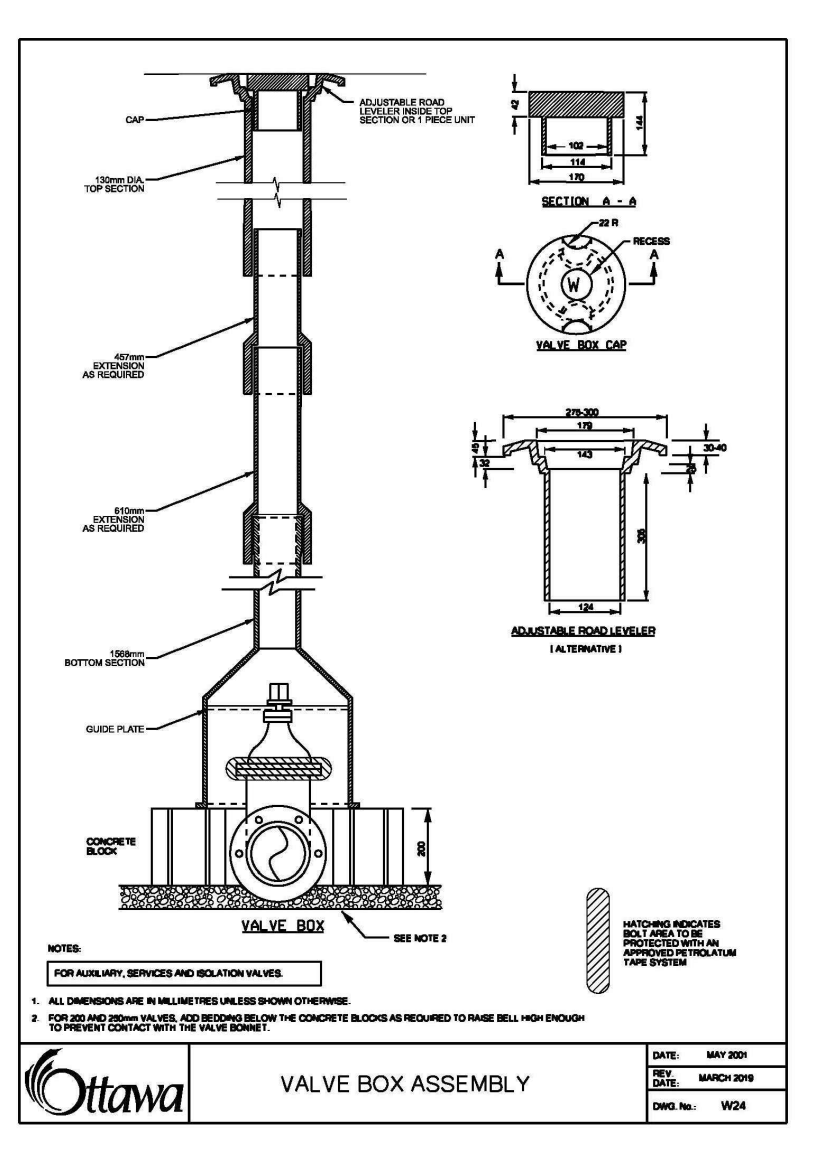
**Ottawa** WATERMAIN CROSSING OVER SEWER



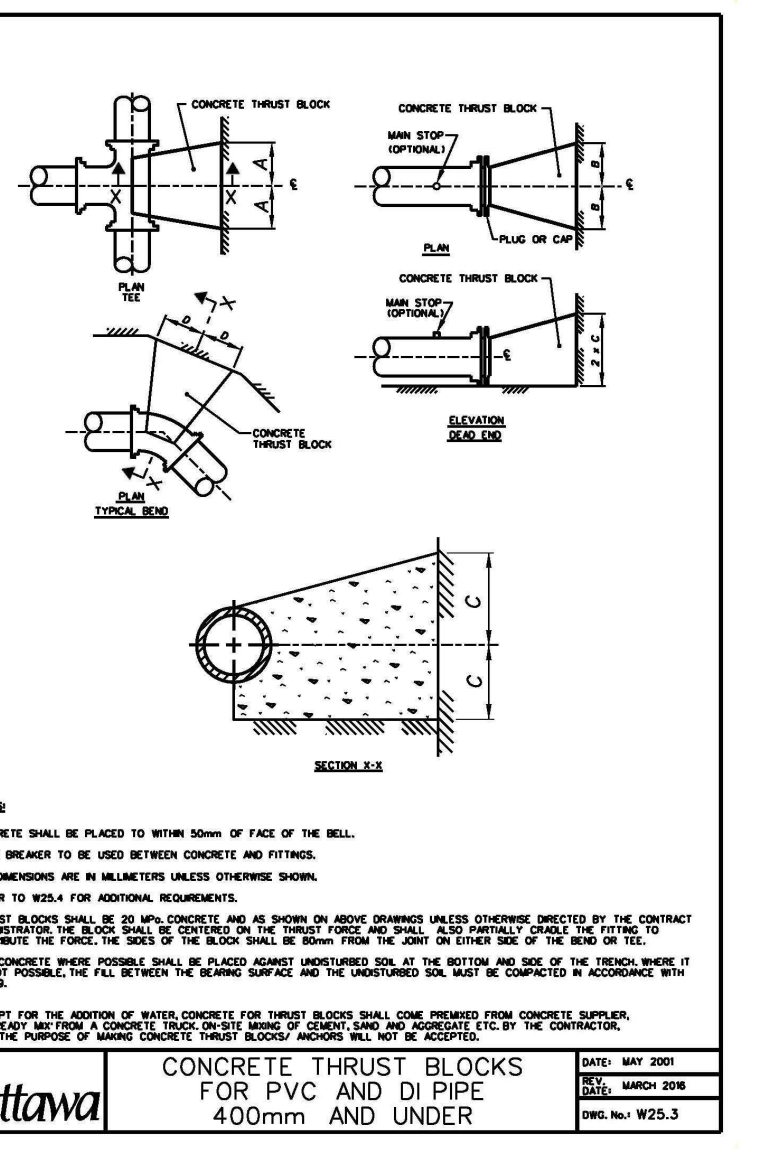
**Ottawa** CATHODIC PROTECTION FOR PVC WATERMAIN SYSTEMS



**Ottawa** CURB RETURN ENTRANCES



**Ottawa** VALVE BOX ASSEMBLY



**Ottawa** CONCRETE THRUST BLOCKS FOR PVC AND DI PIPE 400mm AND UNDER

**THRUST BLOCK DIMENSION TABLES FOR PVC AND DI PIPE 400mm AND UNDER**

1. SOIL DESCRIPTION: VERY FINE SANDS, SANDY CLAYS, SILTS WITH TYPICAL BEARING STRENGTH OF 300 TO 400 KPa

PIPE DIAMETER	A	B	C	D
150	200	200	300	300
152	400	400	300	300
200	400	600	300	400
254	600	600	400	500
305	800	800	400	600
408	1000	1000	600	800

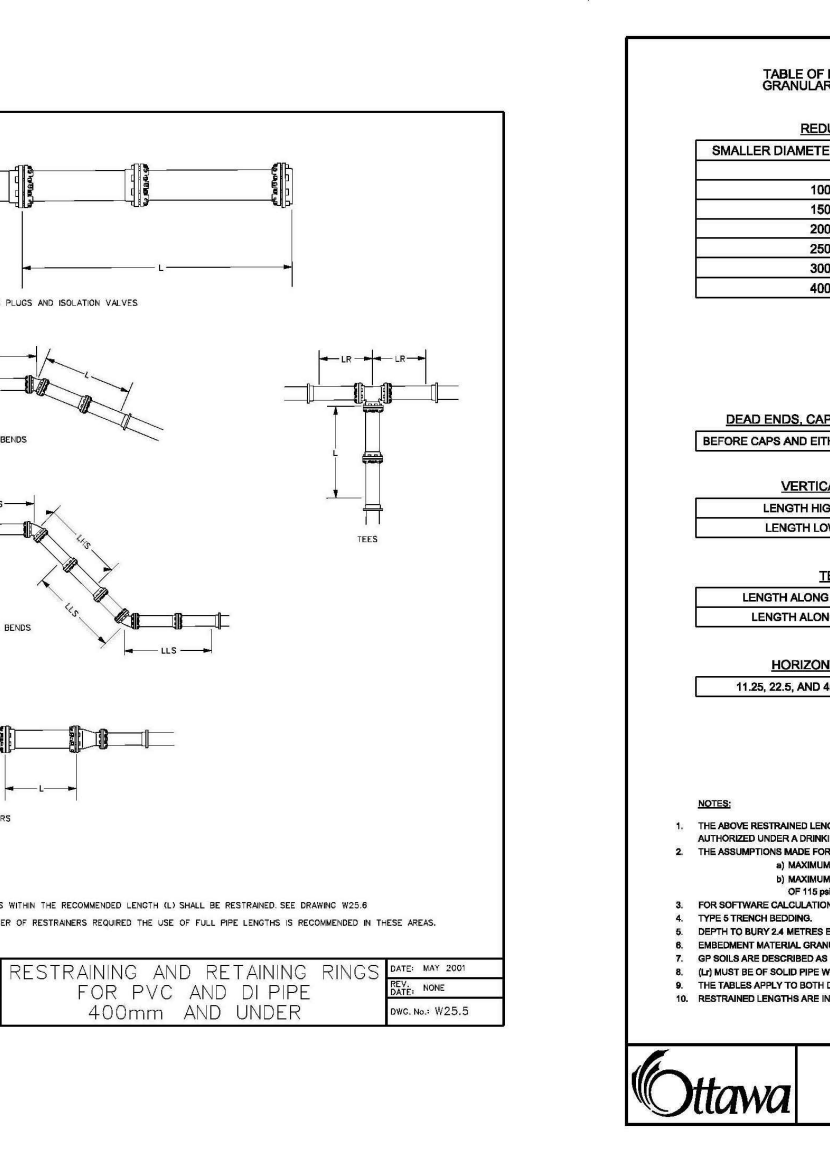
2. SOIL DESCRIPTION: SILT SAND GRAVELS OR CLAY SAND GRAVELS WITH TYPICAL BEARING STRENGTH OF 200 TO 280 KPa

PIPE DIAMETER	A	B	C	D
150	200	200	150	150
152	200	200	300	200
200	300	300	250	270
254	400	400	300	300
305	500	500	300	400
408	750	750	400	600

3. SOIL DESCRIPTION: SANDS, GRAVELS AND GRAVEL SAND MIXTURES WITH TYPICAL BEARING STRENGTH OF 300 TO 400 KPa

PIPE DIAMETER	A	B	C	D
150	100	100	100	100
152	200	200	200	200
200	300	300	200	200
254	400	400	250	270
305	500	500	300	300
408	800	800	300	400

**Ottawa** THRUST BLOCK DIMENSION TABLES FOR PVC AND DI PIPE 400mm AND UNDER



**Ottawa** RESTRAINING AND RETAINING RINGS FOR PVC AND DI PIPE 400mm AND UNDER

**TABLES OF RESTRAINING LENGTHS FOR PVC AND DI PIPE 400mm AND UNDER**

TABLE OF RESTRAINING LENGTHS FOR DI AND PVC WATERMAIN PIPE IN STANDARD GRANULAR OR EMBANKMENT IN BOLS OF BEARING CAPACITY OF 100 KPa AND OVER

PIPE DIAMETER	100mm	150mm	200mm	250mm	300mm	400mm
DEAD END, CAPS FLUSH	NA	3	6	6	10	14
VERTICAL BENS	NA	NA	4	6	9	13
LENGTH FROM SIDE - LIVE	NA	NA	3	6	9	11
LENGTH ALONG THE MAIN - LIVE	1.5	3	3.5	6	6	9
LENGTH ALONG THE MAIN - DEAD	1	1	1	1	1	1
HORIZONTAL BENS	1	1.5	1.5	2	2	2.5

**Ottawa** TABLES OF RESTRAINING LENGTHS FOR PVC AND DI PIPE 400mm AND UNDER

**INTERENT**  
488 Bank Street, Suite 102  
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(613) 997-7816

owner | propriétaire

**CLELAND JARDINE**  
ENGINEERING LTD  
structural engineers | ingénieur structure

**Smith + Andersen**  
530 - 1600 Carling Avenue Ottawa Ontario K1Z 1G3  
1 613 230 1186 smithandandersen.com  
MEP engineers | ingénieur MEP

**PARSONS**  
1223 MICHAEL STREET, SUITE 100, OTTAWA, ONTARIO K1J 1T2  
Tel 613-738-4100 Fax 613-738-7105

general notes | note générale

1. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT.
2. DO NOT SCALE THE DRAWINGS.
3. NOT FOR CONSTRUCTION UNLESS SIGNED BY THE ARCHITECT.

no revisions date

stamp | timbre

ISSUED FOR SITE PLAN APPLICATION / 12/05/2019

architect | architecte

**linebox**  
STUDIO

project title

**473 ALBERT**  
PROPOSED MIXED-USE RENOVATION  
473 ALBERT STREET | OTTAWA | ONTARIO | CANADA

drawing title | titre du dessin

**DETAILS PLAN**

project number | numéro du projet: 477234  
drawn | dessiné: SS  
checked | vérifié: MM / MT  
date | date: 29/11/19  
scale | échelle: As Indicated

drawing number | numéro du dessin: C-103